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Public Health Reports

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The Evolution of a Psychiatric Program in Mississippi

By Estelle A. Magiera, M. D.,* T. A. Watters, M. D.,** and Felix J. Underwood, M. D.*

In 1930, for the first time, a full realization of the utter lack of any psychiatric program in the Mississippi public health program and the urgent need for a beginning in this important branch of modern public health endeavor came upon us in sufficient force to cause some action to be taken. There were no funds available within or outside the State. Trained personnel was not available for employment and could not be obtained even on a loan basis.

No man, woman, or child in Mississippi could go to either of the two mental disease hospitals for examination, diagnosis, prognosis, advice, or referral without first being committed by law as an inmate.

This condition has not been true of the Mississippi State Tuberculosis Sanatorium, under State Board of Health control, since its opening and dedication in 1916. The sanatorium conducts a fine out-patient clinic where any citizen can go at any time by appointment for a fee or not, depending on the financial circumstances of the citizen applying for diagnosis, without the necessity of being admitted to the institution.

No psychiatrists were available to conduct clinics for children or adults in cooperation with the State Board of Health and/or the mental disease hospitals. Indeed, there were no psychiatrists in private practice in the State. The staffs, medical and lay, of the two mental disease hospitals were political selections with few exceptions.

In this dark hour for the mentally ill and the potential future mental patients, we in Mississippi refused to accept a defeatist attitude. We decided to attempt to develop a state-wide child guidance program.

An experienced psychiatrist was employed by the Mississippi State Board of Health and given training as a public health medical officer.

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After obtaining her certificate in public health, she became assistant health officer, first in the city-county health department of Meridian, Lauderdale County, Mississippi, and then in Jackson, Hinds County. After the death of the director, she became full-time director of the city-county health department at Jackson. During the time spent in these general public health positions, cases were constantly referred to her by private physicians and the health officers, although organized work in psychiatry in the State had not begun.

Following a year's study at the Judge Baker Guidance Center, Boston, on a State Board of Health scholarship, she returned to Mississippi, accompanied by additional members for the first child guidance team in the State—the chief psychologist of 18 years' experience at Judge Baker Guidance Center, a well-trained psychiatric social worker, and a well-qualified secretary who had served several years as secretary to the superintendent and medical staff of a large mental disease hospital.

These trained workers immediately launched a twofold state-wide psychiatric program—educational and therapeutic. The team undertook a tremendous pioneering task. No preliminary psychiatric educational work had ever been done in the State, and it was necessary to break down the many prevailing superstitions and fears of the people. This educational work was done by interpreting the services of the team to health officers, public health nurses, school principals, social agencies, parent-teacher associations, juvenile court officials, and practicing physicians throughout the State. It was carried on simultaneously with the therapeutic program at the parent center in Jackson, and later in the five mobile clinics in the State. It was felt that, in addition to benefiting the patients, successful therapy would greatly assist in obtaining support for the program from the citizens of the State.

The beginning was made September 1, 1943, without any special appropriation from any source whatsoever, by using funds available through lapses in budgets, transfers, etc. These came, for the most part, from maternal- and child-health money allotted to the State by the United States Children's Bureau for general programs for mothers and children. A strong determination to succeed despite the lack of money was responsible for the accomplishments in the program.

Financially, the conduct and necessary expansion of the program in Mississippi, and perhaps other States with a similar problem, will be easier in the future. The procurement of properly trained personnel remains an obstacle to the desired and urgently needed expansion of the mental-health program. Well-trained psychiatrists with a knowledge and appreciation of the public health aspects of psychiatry and of public health generally are desirable and necessary for the success of a program. It is wise not to start a program until it can

be developed and administered by capable personnel. In addition to the full-time personnel, top-flight consultants are necessary—consultants who will work and help get the job done and not limit their activities to occasional conversation and advice, as necessary as that is at times. Also, the State administrator must consider all programs and keep them in proper balance insofar as possible. However, a charge of overdevelopment in public health psychiatric programs anywhere in the country could have no justification at the present time; and it is only hoped that adequate financial support, sufficient numbers of trained personnel, and an intelligently receptive public will be forthcoming to insure the success of present and future programs.

No special Federal funds were available for Mississippi until the first Federal appropriation under the National Mental Health Act became available in July 1947. No State funds were made available for matching until July 1948. These funds, as yet, will permit only a minimum program in the State. However, a good start has been made within the limitations of funds and personnel, and it is hoped that all States will not let lack of funds and personnel keep them from beginning at least a small program in their health departments. With good team work and perseverance, the program can be expanded in time, despite severe limitations at the outset.

The great and urgent need for this preventive health service is evident from the many requests for service which cannot be filled because of lack of personnel and facilities. Mental health is of great importance to the citizens of all States, and mental illness is of real concern to us all. We have lagged behind in this particular part of our health work throughout the country for too long. With proper support we can have programs which can be as effective as the programs for malaria and typhus prevention and control, and venereal disease prevention and control. The results have been splendid in many of these other programs.

The importance of scientific training and teamwork in our efforts to prevent mental disease in the lives of so many of our people cannot be overstated. The whole team must work together with full sympathetic understanding, appreciation, and coordination of effort.

From the beginning of the program, we have realized that the efforts of many people would be needed to make the program a success. Two or three people certainly could not do all the work. Much has been accomplished with the teachers, through teacher workshops during the summer months, and they have helped a great deal. The health officers, public health nurses, health educators, the teachers, welfare workers, parents, ministers, and others have been, and will continue to be, most helpful, and it is believed that they, themselves, have received benefits from the program. Many physicians in the State, in addition to the medical health officers, now have a better under-

standing and appreciation of the program, and a desire to help in every way possible. Physicians now are referring most of the emotionally disturbed cases to the team, a practice they did not follow generally during the first year or two of the program. With each succeeding year, these physicians increasingly understand and appreciate the importance of referring emotionally disturbed cases as early as possible to the psychiatrist and her team. Many illustrated talks have been made before medical groups throughout the State, and they frequently ask for the appearance of psychiatrists on their local medical programs to discuss psychiatric disorders. Special symposia and seminars have been held for extern-clinicians in Jackson and at Tulane Universtiy in New Orleans with expenses of the physicians in attendance paid. In addition to these, a 2-week psychiatric institute was held in April 1949 for county health officers and supervising nurses at Gulfport and was sponsored jointly by the Commonwealth Fund and the State Boards of Health of Mississippi, Tennessee, Alabama, and Florida. The purpose was not to make psychiatrists in "six easy lessons," but rather to orient the health officers and nurses in the psychiatric concepts as related to a public health program.

From the outset our child guidance program was twofold in scope—educational and therapeutic—and the services consisted of only one team, psychiatrist, psychologist, and psychiatric social worker, until about a year ago. At the present time, the personnel consists of one full-time psychiatrist, three part-time psychiatrists, three psychologists, three social workers, two social workers in training, and one teacher being trained in remedial reading and speech pathology.

With the appropriation of Federal funds through the National Mental Health Act, the psychiatric services have been expanded since January 1948. In March 1948, a second team consisting of a well-trained psychologist and a psychiatric social worker was added. Recently a psychiatrist was employed to serve part time with this team. This group is based at Greenwood, Mississippi, and holds mobile clinics in Clarksdale, Cleveland, Greenville, and Tupelo. In December 1948, a third team consisting of a psychologist and a social worker was employed to serve the southern area. This team is based at Hattiesburg and holds clinics in Gulfport, McComb, Meridian, and Pascagoula. A psychiatrist gives part-time services to this team. Under the supervision of the psychiatrist, the psychiatric social workers in both of these centers have been trained to counsel parents and children presenting minor emotional disturbances. Children presenting serious emotional problems are treated by the part-time psychiatrist in the respective areas, or they are referred directly to the center in Jackson. The psychologists are doing consultation work with parents in an effort to utilize the parental influence and social environment of the child to strengthen his chances for

recovery. The personnel of these clinics is supervised not only by the part-time psychiatrists, but also by the psychiatrist and director of child guidance in the State. The teams travel to headquarters in Jackson every 2 weeks for consultation. A copy of the complete case history on every child seen in the three therapeutic centers and all of the mobile clinics is kept on file in the Jackson office.

In each of the areas where mental health clinics are conducted, there are full-time, well-trained health educators, supervising nurses, and dental hygienists. Many of these key people have their Master of Public Health degrees and some psychiatric orientation.

After several years' experience, it is our considered judgment that we have traveled farther and faster along the psychiatric road in Mississippi by keeping psychiatry close to public health and medicine and at all times identified with them.

Psychiatrists are available to county health officers in an advisory capacity on education programs. The health officer gives mental hygiene service to patients on a superficial level. Staff conferences are held to discuss the mental hygiene concepts nurses and educators apply in everyday contact with the groups they serve.

Psychologists and social workers are available for advisory and consultant services on educational programs to the county health department personnel, to youth counselors, to principals and teachers, to juvenile courts, to welfare and other agencies interested in the welfare of children. The psychiatrists, psychologists, and psychiatric social workers give series of lectures to classes at Delta State Teacher's College (Cleveland), Millsaps College (Jackson), Mississippi College (Clinton), and Mississippi Southern College (Hattiesburg).

Mississippi now has a few certified psychiatrists in private practice, and two of these are associated on a part-time basis with the child guidance program. We plan to add two or more consultants on a part-time basis as soon as possible. With this set-up which will cover the State, with psychiatrists in private practice, and with teaching centers in New Orleans and Memphis, the gradual, and possibly rapid, development of an expanded program of mental health education and therapeutic services is proposed and will be achieved.

The routine procedure in the clinics calls for the child to be seen first by the psychologist to evaluate the child's intelligence, school achievement, and special abilities or lack of them. On this first visit the parent is interviewed by the social worker and a complete social history is obtained—birth and development, social relationships in the home, in the school, in the community, and a history of the problem presented. The child is then seen by the psychiatrist in an effort to discover the causative factors and motivations of his problem. This study may consist of a single diagnostic interview, or, if necessary, repeated therapeutic interviews. During the study and treatment of

the child, the psychiatric social worker carries on the treatment of the parents. In all cases the parents are also interviewed briefly by the psychologist who gives the interpretation of the test findings.

Following a complete study of a case, the members of the staff report their findings and discuss all of the pertinent data at a staff conference. The psychiatrist then summarizes the case and recommends the plan of treatment for the child. In the mobile clinics these conferences are attended by principals, teachers, health officers, social workers and others who have dealt with the child, who are familiar with the history, and who will share in the responsibility of the treatment plan outlined at the conference.

Our referrals come from the schools, social agencies, parents, private physicians, and the county health department personnel. Health officers in Mississippi, after the psychiatric service has been interpreted to them, have invariably incorporated it in their over-all public health programs. Some of them are outstanding in their cooperativeness. Each child who comes to the center must have a complete physical examination, which is made either by the family physician or the county health officer. A record of the physical findings is brought in with the child on his first visit to the center in order to rule out any physical basis for the presenting problem.

The child guidance clinic is held in the respective county health departments with one exception. In Greenwood it was impossible to find quarters to house the child guidance team. The Junior League graciously offered to share their quarters in the city hall, which also houses the police department. Their offer was accepted in spite of the fact that we felt it was psychologically unsound. This view was vividly confirmed when a 9-year-old boy referred to the clinic came in with a toy pistol and expressed a great deal of fear that he might be apprehended by the police. The child guidance team will of necessity remain there until the new health department is completed and permanent quarters are available.

Mobile clinics are held one day a month. A monthly clinic, of course, is not ideal, but even at these long intervals we have carried children over a period of months with therapeutic success. When we have seen acutely upset children, the parents have been willing to bring them to Jackson for more frequent psychiatric interviews.

We have noted a spectacular growth in the nurses' ability to evaluate psychiatric implications in behavior problems of children. At one of our early staff conferences we discussed a case referred for thumb-sucking in which the mother had unwisely used an oatmeal box as a restraint. One of the staff nurses confessed saying, "It was I who recommended the oatmeal box as a restraint for that baby. Today, at least I have learned what *not* to do."

During the ensuing years, the public health nurses through partici-

pation in the educational program—institutes, lectures, staff conferences—have become more and more psychiatrically minded. Today the nurse is much more capable of evaluating emotional tone in the home, the parent-child relationship, and the emotional needs of the developing child. This is indeed evidenced by the steady improvement in the histories which the nurses prepare for the child guidance team in the mobile clinics.

Recently a nurse made the comment: "Attending a staff conference in which you discuss the social history, the psychological examination, and the psychiatric implications of the presenting problem is like an experiment in a laboratory to me. I see the practical application made of all of the theories which I have gleaned through my reading and through institutes and lectures."

Mississippi is primarily a rural State, and the county health departments form the foundation of the state-wide program. Each public health nurse is responsible for all the services in her particular area. The public health nurse knows families and has a positive working relationship with them. She sees the mother in the prenatal clinic and in some counties even assists at the delivery. The mother and child are seen by her after the child is born. She follows the child in the county health department through his immunizations and later during his school years. Due to this close contact, she has established a positive rapport not only with the mother, but with the family. She is in a unique position to give us valuable information regarding the emotional tone in the home and in the parent-child relationship. For this reason, nurses have been very helpful in keeping us informed of the progress of the cases seen in the clinic. In keeping with what Dr. Watters [1] said in addressing the National League of Nursing Education in 1939, our nurses have accepted the challenge of the disturbed personality and approach each patient as an individual and not as a number or automaton. Mississippi nurses certainly follow the Watters' dictum in doing their part to keep patients and their families from feeling any stigma of mental disease.

We have tried to gear our program to the community needs and available social resources. At times we have worked under great handicaps and under many adverse conditions. The child guidance program has had excellent acceptance and wholehearted cooperation. The demand for new clinics and services surpasses our ability to supply these needs. At the Greenwood clinic, we now have a waiting list of 30 patients and at the Jackson center, a waiting list of 40 patients. Yet we have many times felt utterly helpless in making satisfactory disposition of cases because of the lack of necessary professional services and very inadequate resources in the State. In the State,

[1] Watters, T. A.: Psychiatry in nursing education. Forty-fifth Annual Report of the National League of Nursing Education, 1939.

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there are very few approved boarding homes certified to care for children. In the schools there are no facilities for remedial reading, notwithstanding the fact that we see many children with reading disabilities. We also see many children with speech defects who are in need of special training, but this service will not be available until the trainee who is on a State Board of Health scholarship studying remedial reading and speech pathology completes her course.

In only one community where we work is provision made in the school system for the child of below average ability. The public schools of Greenville provide an opportunity room for these children, while in Jackson, the capital and largest city in the State, there is no such facility. We find many children who are below average in intelligence and who are disciplinary and scholastic problems because they cannot compete with the average child for whom the curriculum is set up. The school authorities are cognizant of the need for special classes, but so far have not succeeded in adding these to the general public school system. Despite the lack of these facilities, school people cooperate wholeheartedly. Teachers make every effort to handle the individual cases in the best way possible in the regular classroom. Recently the psychiatrist and psychologist met with the superintendent of schools and the board of education, interpreted these needs to them, and outlined a program for the exceptional child. It was hoped that by the fall of 1949 this program would be added to the regular school curriculum.

We are repeatedly confronted with the problem of what is to be done with the defective child. The Institution for the Feeble-minded at Ellisville is only a custodial institution and has no facilities for a vocational training program for the higher grade defective. Furthermore, there are no private institutions for this type of child in Mississippi. In 1945, professional groups in the State made an intensive study and survey of the institution at Ellisville, and a comprehensive program has been outlined for a gradual reorganization to bring the institution up to the best possible modern standards. A good start has been made in this direction, and we hope that in the near future the institution will be able to offer to each inmate the greatest degree of vocational and educational training for which he is capable.

We have found it most disheartening that nowhere in the State is there a detention home for juvenile delinquents. No county or municipality maintains a suitable detention home for children awaiting hearings. Neither does any private institution or public agency caring for children make arrangements for temporary detention for the delinquent child. These young offenders must be kept in jail pending trial. The probation officers and juvenile judges are keenly aware of the inadequate resources for handling these young offenders

and make every effort to segregate them from the adult prisoners and to make the best of a bad situation.

We are at a total loss in handling the feeble-minded Negro child as there are absolutely no facilities in the State. The Industrial School at Oakley for Negro males will not admit the feeble-minded child. Because of the crowded conditions there, it is almost impossible to admit any child to the institution.

The complete lack of such facilities and the many unmet needs of the children of the State have been repeatedly brought to the attention of the lawmakers. The awareness of these needs has given impetus to the organization of the Mississippi Children's Code Commission. In October 1945, Governor Thomas L. Bailey appointed to this commission 80 members representing the various public and private agencies in the State concerned with the promotion of the welfare of children. These people have assumed the following responsibilities: (1) to study the conditions in the State affecting the welfare of children and the laws pertaining thereto; (2) to make surveys of the facilities of the various agencies and institutions responsible for the care, control, and protection of children; (3) to recommend definite legislation for the establishment of minimum standards for the adequate care and protection of the children; and (4) to furnish educational and informational data obtained from the studies of the commission and report them to the Senate and House Committee on Child Welfare Legislation. The members of the commission have been zealous workers and have already made a contribution.

The Mississippi program, starting as it did on a "shoestring", has grown in spite of the many handicaps. Our hope and plan for the future is to have a psychiatric program available in every full-time county health department, including not only our present program which is for all children between the ages of 3 to 17, but also a program for adults.

It is also hoped and planned that sometime in the future proper integration of the State Board of Health and mental disease hospital programs may be effected.

Anopheline Threshold of Malaria Transmission Noted in Jamaica

By George A. Thompson*

Malaria control operations directed toward reducing adult vector densities by antilarval measures always pose the vexing question: "To what density level must the adult mosquitoes be reduced in order that the hazard of malaria transmission will be negligible?" Such level, of course, will vary for the several species of vector mosquitoes and will depend principally on the habits of each species, on the habits of the human population in the subject area, and on the current abundance of human malaria carriers. In Puerto Rico during World War II, experience indicated that few, if any, new cases of malaria are likely to be contracted by military personnel living in screened quarters if the density index (number of mosquitoes caught per trap per night) of *Anopheles albimanus* Wied. does not rise above two in the intracantonment area (Henderson, 1945).[1] While the present author was stationed at Fort Simonds, Jamaica, B. W. I., an opportunity was afforded for making observations on this relationship between the abundance of the local malaria vector, *A. albimanus*, and malaria transmission. These observations are discussed here.

Only one case of malaria was contracted by military personnel while on the base during the 18-month period, March 1944 through September 1945. Before the onset of the disease, this infected individual had been on duty for about 3 hours at dawn and 3 hours at sunset each day for several weeks at a location near the boundary of the protected area. During this 18-month period, the combination of little rainfall and adequate malaria control activities, both on the military reservation and in the area adjacent to it, resulted in low population densities of *A. albimanus*, as well as of other mosquitoes. The "index" of *A. albimanus* abundance during this period did not rise above five per trap-night. As a result of this favorable situation, there was a relaxation of malaria discipline among both military and civilian personnel. Personal antimalarial measures, such as restricted activities outdoors after sunset, use of repellents, and use of mosquito bars, were not strictly enforced.

In 1945 following this relatively dry 18 month period, the fall rainy season began early, and during some weeks of September and October

[1] Henderson, J. M.: Anti-malarial measures for protection of military personnel in Puerto Rico and their applicability to civilian malaria control. Puerto Rico J. Pub. Health & Trop. Med. **20:** 419–445 (1945).

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as much as 3.5 to 6 inches of rain were recorded. The total rainfall for the 2 months was 13.8 and 13.1 inches, respectively. Pasture lands, sugarcane fields, and rice fields remained flooded throughout the period. During this period, daily showers greatly limited the effectiveness of paris-green larvicidal treatments. As a result, the densities of *A. albimanus* adults rose rapidly as was indicated by animal-bait trap collections. Such traps were located at the corners of a rectangle enclosing the housing area and are believed to have furnished a reasonably accurate index to the population of *A. albimanus* entering the area. The average intracantonment collections of *A. albimanus* are plotted in figures 1 and 2. The data were obtained by totaling the number of *A. albimanus* caught in all four traps during each week and dividing the sum by the number of nights the traps were operated that week. This average catch per trap-night is designated as the "density index" of the adult *A. albimanus* population.

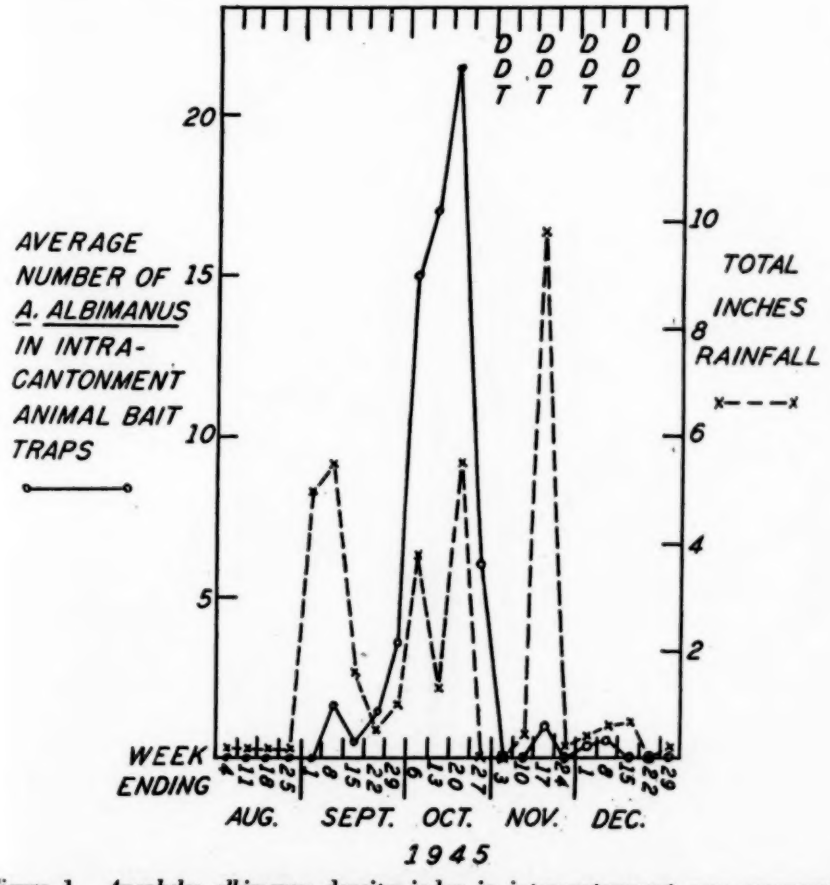

Figure 1. *Anopheles albimanus* density index in intracantonment area compared to weekly rainfall, August–December 1945, Fort Simonds, Jamaica, B. W. I. The dates of larvicidal applications are indicated by the letters DDT.

The density index for the area under observation rose above five *A. albimanus* during the first week in October and remained above five throughout that month. Fourteen days after the density index exceeded five, two military personnel were admitted to the hospital with *Plasmodium falciparum* malaria. During the subsequent 4 days, two additional cases were admitted. None of these men had been off the post during the 4 weeks prior to the onset of the disease, nor had any of them been on night duty. However, two of them had had some exposure to mosquitoes, since they pitched horseshoes nightly after mess until it became too dark to continue the game. It seems reasonable to assume that all four men contracted malaria within the area protected by control operations.

Among the civilian population, 37 cases of malaria were diagnosed

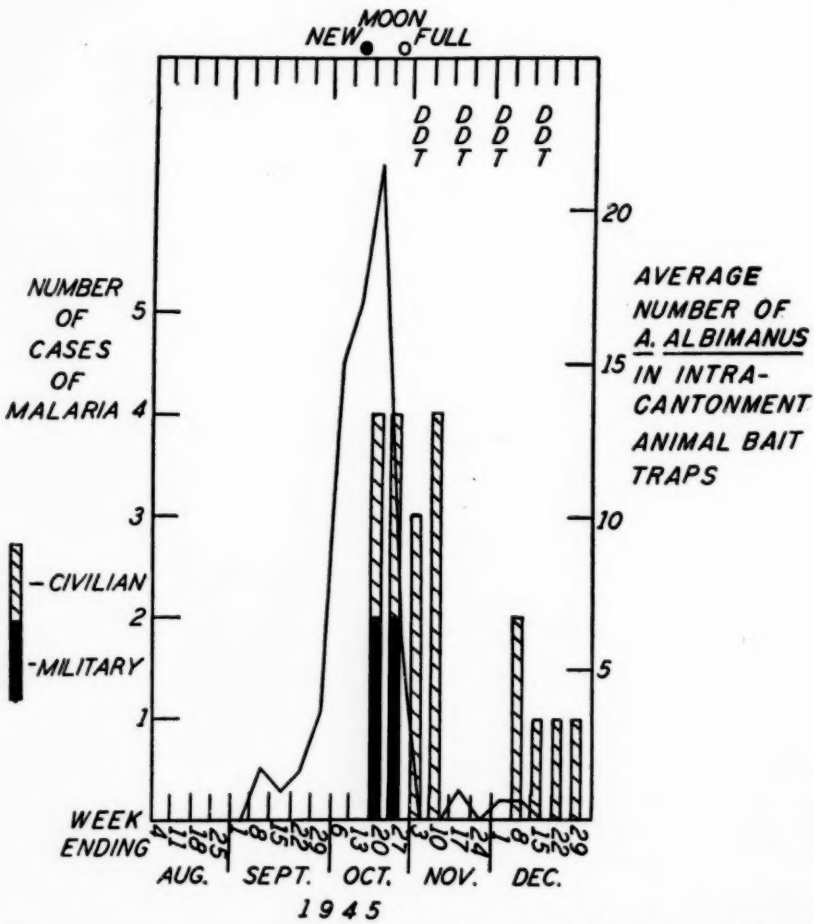

Figure 2. Number of cases of malaria among military and civilian personnel in relation to the weekly *Anopheles albimanus* density index, moon phases, and dates of larvicidal applications. August–December 1945, Fort Simonds, Jamaica, B. W. I.

at the hospital during September and October. Some of these individuals had been repeatedly in highly malarious areas off the post, while the case histories of others indicated that they usually had "chills and fever" every fall. Of the 37 civilian cases, only 16 were considered to have been contracted on the post. These data are presented in figure 2. That malaria during this period was prevalent on the island in extracantonment areas is shown by data furnished by the local medical services covering a spleen survey made during October 1945 among school children. At a town about 5 miles from the post, a parasite rate of 33 percent was found. A house-to-house canvass of the population within a 2-mile radius of the post was made during the third week in November. In a population of about 1,700, approximately 11 percent reported "chills and fever" during that fall. At the height of the malaria season, absenteeism among native workers on the post reached 35 percent, as compared with a normal rate of 10 percent.

During November and December, the United States Army made two aerial applications of DDT per month over the base (fig. 1). Although nearly 10 inches of rain fell during the third week in November, these more effective control measures held *A. albimanus* populations at a low level. Also malaria cases gradually decreased among the native population until the end of December. Thus, with the return of vector abundance to that indicated by density indexes of below five *albimanus* per trap-night, malaria transmission largely ceased.

Summary

Data are presented for malaria cases contracted at a military installation in Jamaica, B. W. I., during the fall of 1945. Although only one case of the disease was contracted by military personnel and transmission among civilians was rare during the 18 months prior to that period, four cases occurred among military personnel, and a much larger number among civilians, about 2 weeks after excessive rainfall caused the animal-bait trap catches of *Anopheles albimanus* to exceed an average of five per trap per night. During the same period, the incidence of malaria among the native population living near the post was estimated at from 11 to 35 percent. It is concluded that in Jamaica, as has been reported for Puerto Rico, few, if any, new cases of malaria will be contracted by personnel living in screened houses and using proper malaria discipline, if the vector level is held below that indicated by an average of five *A. albimanus* per trap per night.

ACKNOWLEDGMENT

The writer expresses his gratitude to Maj. Harry D. Pratt for his assistance, and to Maj. Porter A. Stephens, Col. W. H. W. Komp, Col. George H. Bradley, and Col. John M. Henderson for reviewing the paper.

Plague Epizootic in Cottontail Rabbits

By VERNON B. LINK, M. D., M. P. H.*

On January 6, 1950, a hunter shot and cleaned six cottontail rabbits about 2 miles south of his home in Maljamar, Lea County, New Mexico. Three days later he became ill and developed an axillary bubo. On January 15, a clinical diagnosis of bubonic plague was made at the Veterans Administration Hospital in Albuquerque. The patient was seriously ill by then, but he completely recovered after treatment with streptomycin and sulfadiazine.

The State Health Department inspected Maljamar and noted that the town was infested with domestic rats. The question immediately arose as to whether these rats were a possible source of the infection. If the rats were involved in an epizootic, then there existed a far greater hazard to the residents of Maljamar than if wild rodents only were concerned. To answer this question, the State Health Officer requested the Western Communicable Disease Center Laboratory to make a plague survey in Lea County.

The survey crew began work February 7. They hunted and trapped domestic and wild rodents in and around Maljamar during the next 2 weeks before proceeding to other parts of Lea County. During this period, 308 wild animals were obtained, and 394 fleas and 202 ticks were removed from them. Numerous cottontail rabbits and pack rats were found dead. Tissue and fleas from two specimens of each proved to be plague-infected. In addition, fleas from other pack rats, as well as from pack rat nests and grasshopper mice, were positive for plague. No plague was found in domestic rats, and none of the 32 rats trapped in Maljamar had fleas.

These findings provide epidemiologic support for the surmise that the patient had acquired plague from cottontail rabbits. Heretofore, rabbits were not believed subject to epizootics of plague. During the 15 years in which this laboratory has conducted plague surveys, 3,693 fleas from 431 cottontail rabbits, and 873 fleas from 337 jack rabbits have been tested. Two pools of fleas from cottontail rabbits and the tissue of one cottontail rabbit found dead were positive for plague. No specimens from the jack rabbits were positive.

The evidence obtained in Lea County implicating cottontail rabbits for the first time in an active plague epizootic changes the opinion formerly held that they were not too great a hazard to man. Health officers in counties with known active plague foci should warn hunters of the danger involved in handling and cleaning rabbits.

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INCIDENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

REPORTS FROM STATES FOR WEEK ENDED MAY 6, 1950

For the current week in the Nation, reported cases of influenza continued to decrease from the preceding week, from 5,548 to 3,399. The total for the corresponding week last year was 2,023, and the 5-year (1945–49) median was 1,432. The cumulative total for the first 18 weeks of the year was 233,810, which may be compared with the corresponding total of 67,420 for the same period last year and 290,376 for 1947, the highest on record for the past 5 years. The corresponding 5-year median was 130,335.

Idaho reported an increase from 34 cases of influenza last week to 140 currently, and Alaska reported a rise from 6 to 124 cases for the same period.

Reported incidence of whooping cough was higher for the current week (2,691 cases) than for the 5-year median (2,073 cases). The high corresponding week in the last 5 years occurred in 1947 when 3,609 cases were reported. The cumulative total for the first 18 weeks of 1950 was 47,110, which may be compared with 18,040 for the same period in 1949 and 48,000 for 1947, the highest on record during the past 5 years.

Reported cases of meningococcal meningitis were 86 for the current week, as compared with 66 for the corresponding week last year and 79 for the 5-year median. The cumulative total for 18 weeks of this year was 1,703, which may be compared with the corresponding total of 1,517 for the same period in 1949 and 4,167 in 1945, the highest on record during the past 5 years.

Reported cases of diphtheria, measles, scarlet fever, and typhoid and paratyphoid fever for the current week were below the corresponding 5-year medians and below the 5-year cumulative medians for the first 18 weeks of the year.

A total of 72 cases of acute poliomyelitis was reported for the week, which includes 14 cases in California and 28 cases in Texas.

Twelve cases of infectious encephalitis were reported in the United States for the current week; 1 case of psittacosis and 2 cases of anthrax were reported.

Telegraphic case reports from State health officers for week ended May 6, 1950

[Leaders indicate that no cases were reported]

Division and State	Diphtheria	Encephalitis, infectious	Influenza	Measles	Meningitis, meningococcal	Pneumonia	Poliomyelitis	Rocky Mountain spotted fever	Scarlet fever	Smallpox	Tularemia	Typhoid and paratyphoid fever [1]	Whooping cough	Rabies in animals
NEW ENGLAND														
Maine			7	36	1	16			1				27	
New Hampshire				3									6	
Vermont				8					3				40	
Massachusetts	4			451	1				140			3	132	
Rhode Island	1		1	19	2	5			4				36	
Connecticut				115		39			26				73	
MIDDLE ATLANTIC														
New York	5	4	(2)	1,602	4	257	4		[3] 142			3	159	16
New Jersey	1			1,561	5	58			62			1	143	
Pennsylvania	5			770	3	81	1		149		2	2	180	1
EAST NORTH CENTRAL														
Ohio	14		4	559	4	125	1		159				246	6
Indiana	7			872		9	1		55				80	16
Illinois			13	1,021	6	153	2		33		2	1	103	3
Michigan	3	2	3	1,384	2	62	1		138			1	212	4
Wisconsin			133	590	1	17			75				151	
WEST NORTH CENTRAL														
Minnesota			3	313		7			34			1	57	
Iowa				382	1	1			9				25	13
Missouri	1		7	72	2	32			29			3	21	
North Dakota			11	4	2	215			1				1	
South Dakota	1			38		1			3				1	
Nebraska			29	229		10	1		23				7	
Kansas	1		1	55		22			17				28	2
SOUTH ATLANTIC														
Delaware				6	1				2				13	
Maryland	1		10	91	5	52	1		17		1	1	67	
District of Columbia				70		25			4			1	4	
Virginia	1		475	119	9	58			8			2	81	2
West Virginia			112	252		6	2		4			1	52	2
North Carolina	3			280	1		2		13				96	
South Carolina			59	58	2	13			1			1	15	3
Georgia	3	4	107	88	6	341			3		3		3	11
Florida	3		7	150		22	1		4				13	

Georgia	3		7	150		22	1		4					
Florida														
EAST SOUTH CENTRAL														
Kentucky	1		120	464	4	21			6			5	38	17
Tennessee	2	1	28	126	5		1	2	31			2	41	3
Alabama	5		81	74	1	76			8			1	15	8
Mississippi	3		27	57	2	30	1		2				2	
WEST SOUTH CENTRAL														
Arkansas	1		300	94	1	37	3				6	1	50	7
Louisiana			13	14	2	36	2	1	6		1	1		
Oklahoma	1		192	21	2	46			5				14	2
Texas	13	1	1,237	835	9	332	28		27		1	3	262	22
MOUNTAIN														
Montana			30	86					20		1	1	4	
Idaho	1		140	92			1	1	6				18	
Wyoming				39					2					
Colorado	1		37	116		50		1	7			1	15	4
New Mexico				31		9			2				15	
Arizona			150	123		38	1		19				63	
Utah	1			263					1			1	10	
Nevada				4		1	1							
PACIFIC														
Washington			20	139		1			29			2	32	
Oregon			35	11	1	30	3	1	9			1	40	
California	6		7	665	1	32	14		68			1		
Total	89	12	3,399	14,452	86	2,366	72	6	1,407		17	41	2,691	142
Median, 1945–49	188	11	1,432	27,787	79		36	7	2,047	9	14	54	2,073	
Year to date, 18 weeks	2,548	236	[4] 233,810	160,816	1,703	45,268	[5] 1,586	24	30,695	21	363	800	47,110	2,787
Median, 1945–49	4,821	151	130,335	334,940	1,596		672	22	47,464	111	329	855	38,450	
	(27th)		(30th)	(35th)	(37th)		(11th)		(32d)	(35th)		(11th)	(39th)	
Seasonal low week ends	July 9		July 30	Sept. 3	Sept. 17		Mar. 18		Aug. 13	Sept. 3		Mar. 18	Oct. 1	
Since seasonal low week	6,819		[4] 264,340	179,946	2,616		[5] 451		47,134	41		290	68,646	
Median, 1944–45 through 1948–49	12,387		173,893	369,886	2,568		219		73,693	165		382	66,773	

[1] Including cases reported as salmonellosis.
[2] New York City only.
[3] Including cases reported as streptococcal sore throat.
[4] Excludes 40,000 cases estimated by county health officers to have occurred in Kentucky during the period Jan. 1 to Apr. 8, 1950, and 4,000 cases estimated to have occurred in Jones County, Iowa.
[5] Deduction: Kentucky, week ended Feb. 11, 3 cases, week ended Apr. 1, 1 case.

Anthrax: New Jersey and Pennsylvania, 1 case each.
Psittacosis: Indiana, 1 case.
Alaska: Influenza 124, pneumonia 2, whooping cough 4.
Hawaii: No cases reported.

DEATHS DURING WEEK ENDED MAY 6, 1950

	Week ended May 6, 1950	Corresponding week, 1949
Data for 94 large cities of the United States:		
Total deaths	9,302	9,040
Median for 3 prior years	9,208	
Total deaths, first 18 weeks of year	177,330	175,461
Deaths under 1 year of age	603	652
Median for 3 prior years	660	
Deaths under 1 year of age, first 18 weeks of year	11,289	11,867
Data from industrial insurance companies:		
Policies in force	69,821,199	70,427,217
Number of death claims	12,284	12,988
Death claims per 1,000 policies in force, annual rate	9.2	9.6
Death claims per 1,000 policies, first 18 weeks of year, annual rate	10.0	9.7

FOREIGN REPORTS

CANADA

Provinces—Notifiable diseases—Week ended April 22, 1950.—Cases of certain notifiable diseases were reported by the Dominion Bureau of Statistics of Canada as follows:

Disease	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Brucellosis					4	1	2	1	1	1	10
Chickenpox	1		55	1	233	163	25	21	39	193	731
Diphtheria					3						3
Dysentery:											
Amebic						1				1	2
Bacillary					3	4			1	1	9
German measles			79		17	920		102	117	446	1,681
Influenza			18			38	5				61
Measles			1	35	571	347	65	63	53	165	1,300
Meningitis, meningococcal									1	1	2
Mumps			108		224	337	5	71	147	346	1,238
Scarlet fever	1				81	31	3	10	66	11	203
Tuberculosis (all forms)	19		12	9	121	22	16	27	1	38	265
Typhoid and paratyphoid fever					6			2		4	12
Venereal diseases:											
Gonorrhea	2		12	10	141	46	17	16	35	43	322
Syphilis	2		2	9	47	31	9	13	2	7	122
Other forms										1	1
Whooping cough			41		106	53	9	2	1	64	276

FINLAND

Notifiable diseases—March 1950.—Cases of certain notifiable diseases were reported in Finland as follows:

Disease	Cases	Disease	Cases
Diphtheria	116	Poliomyelitis	4
Dysentery	10	Scarlet fever	853
Gonorrhea	540	Syphilis	43
Meningitis, meningococcal	12	Typhoid fever	11
Paratyphoid fever	74		

MADAGASCAR

Notifiable diseases—March 1950.—Notifiable diseases were reported in Madagascar and Comoro Islands as follows:

Disease	Aliens		Natives	
	Cases	Deaths	Cases	Deaths
Beriberi			1	
Bilharziasis			64	
Diphtheria	1		1	
Dysentery:				
Amebic	9		161	1
Bacillary			2	
Erysipelas			21	
Influenza	17		3,234	48
Leprosy			36	
Malaria	240	1	34,020	257
Measles	3		37	3
Meningitis, meningococcal			3	1
Mumps	2		145	
Paratyphoid fever			1	
Plague			10	6
Pneumonia (all forms)	1		615	133
Poliomyelitis			1	
Puerperal infection			2	
Trachoma	1			
Tuberculosis, respiratory	3	1	87	12
Typhoid fever	4	1	8	3
Whooping cough	1		181	7

WORLD DISTRIBUTION OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

From consular reports, international health organizations, medical officers of the Public Health Service, and other sources. The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

CHOLERA

(Cases)

Since many of the figures in the following tables are from weekly reports, the accumulated totals are for approximate dates.

Place	January-February 1950	March 1950	April 1950—week ended—				
			1	8	15	22	29
ASIA							
Burma	1	5				1	
Bassein						1	
Maubin		3					
Rangoon		1					
India	[1] 18,558	9,480	[2] 1,956	[2] 1,179	685	777	
Calcutta	[1] 958	899	365	406	685	777	
Cocanada	2						
Cuddalore	17	9					
Madras	8	3					
Masulipatam	45	1					
Negapatam	53	14					
Tellicherry	27						
Tuticorin	25						
Indochina		6					
Cambodia		5					
Cochinchina		1					
Rachgia		1					
Pakistan	3,578	3,058	1,602	57	36	11	
Chittagong		25	3	7	2	11	
Dacca	11	8		50	34		

[1] Includes import cases. [2] Preliminary figures.

PLAGUE

(Cases

(P=present)

Place	January–February 1950	March 1950	April 1950—week ended— 1	8	15	22	29
AFRICA							
Belgian Congo	3			1			
Costermansville Province	2						
Stanleyville Province	1			1			
Madagascar	24	10					
Rhodesia, Northern		2					
Union of South Africa	4	P				1	
Orange Free State	[1] 2					1	
ASIA							
Burma	86	12	1	3	2		
Bassein				1			
Bhamo	[2] 1						
Henzada		3					
Kyaiklat		7					
Myaungmya		1					
Myingyan		1					
Rangoon				[2] 1	1		
Yenangyaung	11						
China:							
Chekiang Province	8	2					
Wenchow	[3] 4						
Fukien Province	68	51					
Kwangsi Province	[3] 63						
Kwangtung Province	15						
India	[4] 15,436	13,271	[5] 422	[5] 587			
Indochina (French):							
Annam	17	13	4		2	4	
Cambodia	4	5					
Cochinchina			2				
Laos	1	1					
Java	226	32	9	9	4		
Pakistan	[6] 1						
Thailand (Siam)	36	15					
SOUTH AMERICA							
Ecuador	4						
Loja Province	4						
Peru	5						
Piura Department	5						
Venezuela					5		
Miranda State					5		

[1] Includes one suspected case. [2] Imported. [3] Deaths. [4] Revised figures. [5] Preliminary figures.
[6] In Karachi, imported.

SMALLPOX

(Cases

(P=present)

AFRICA							
Algeria	24	6		[1] 5			
Bechuanaland	3						
Belgian Congo	352	276	34				
British East Africa:							
Kenya			1				
Nyasaland	134	69					
Tanganyika	86	18					
Cameroon (British)	217	14					
Cameroon (French)	12	7		[1] 6			
Dahomey	135	37		[1] 2	[2] 4		
Egypt	[2] 2	[4] 1					
Eritrea		1					
Ethiopia	4	2					
French Equatorial Africa	264	98		[1] 7	[2] 11		
French Guinea		2					
French West Africa: Haute Volta	44	75		[1] 5			

See footnotes at end of table.

SMALLPOX—Continued

Place	January–February 1950	March 1950	April 1950—week ended— 1	8	15	22	29
AFRICA—continued							
Gambia	4						
Gold Coast	3	2			13	6	
Ivory Coast	148	217		[1] 35			
Libya	2						
Mauritania	1						
Morocco (French)		5					
Mozambique	51	12					
Nigeria	3,755	[5] 1,522	[6] 17	[6] 16	[6] 11	[6] 10	
Niger Territory	336	168		[1] 40			
Rhodesia:							
Northern	1	2					
Southern	162	84					
Senegal	2						
Sierra Leone	8	7					
Sudan (Anglo-Egyptian)	20	7	12	1	3	3	
Sudan (French)	39	23		[1] 11			
Togo (French)	23	15		[1] 4			
Tunisia		1					
Union of South Africa	253	P	P	P	P		
ASIA							
Afghanistan	120						
Arabia	232	47	13	[7] 14			
Bahrein Islands: **Bahrein**	8	3	22				
Burma	2,967	1,022	172	89	98		
China	298	136	13	13	19	15	
India	26,437	18,083	[8] 522	[8] 486	[8] 537	[8] 657	
India (Portuguese)		1					
Indochina	199	40	6	4	1	4	
Indonesia:							
Java	243	170	19	45	37	186	
Sumatra	[9] 34	3	1		7		
Iran	96	26	1	4	1		
Iraq	48	24	4	2	5	12	5
Israel	15						
Japan	3	1					
Korea (Southern)	[10] 278	[11] 10					
Lebanon	[4] 1						
Pakistan	2,702	2,114	546	[8] 13	[8] 13	[8] 18	
Palestine	[12] 63	16					
Syria	8	7					
Thailand (Siam)	420	24	8		2		
Transjordan	[12] 18	1					
Turkey (See Turkey in Europe).							
EUROPE							
Great Britain:							
England:							
Blackburn			[13] 1		[13] 1		
Liverpool					[4] 1		
Scotland: **Glasgow**					[14] 21		[13] 2
Turkey	5				1	1	
NORTH AMERICA							
Mexico	41	16			3		
SOUTH AMERICA							
Argentina	148	43	5	11	14	15	
Brazil	16	2		1			
Chile						[13] 2,419	
Colombia	41	9					
Ecuador	[16] 62	3					
Venezuela	19	10		1			
OCEANIA							
Australia: **Fremantle**		[17] 1					

[1] Apr. 1–10, 1950. [2] Apr. 11–20, 1950. [3] Includes 1 imported case. [4] Imported. [5] Feb. 26–Mar. 11, 1950. [6] In Lagos only. [7] Includes 1 case landed at Aden Apr. 5, from a vessel. [8] In sea and air ports only. [9] Includes suspected cases. [10] Only report from city of Seoul (8 cases) available for the month of February. [11] For the city of Seoul only. [12] For the month of January only. [13] Suspected. [14] Reported Mar. 26–Apr. 11, 1950. [15] Number of cases reported up to Apr. 25 in outbreak that began in March. [16] Corrected figure. [17] Off-shipping.

TYPHUS FEVER*

(Cases; P=present)

Place	January-February 1950	March 1950	April 1950—week ended—				
			1	8	15	22	29
AFRICA							
Algeria	35	12		[1]1			
Basutoland	16	4					
Belgian Congo	[2]11	6	6				
British East Africa: Kenya	2	2	[2]2		[2]1		
Egypt	20	8	6				
Eritrea	7	1					
Ethiopia	128	23					
Gold Coast	2						
Libya	32	18	1	1	5		
Madagascar	[2]1						
Morocco (French)	2	1					
Morocco (International Zone)	1						
Nigeria	1						
Sudan (Anglo-Egyptian)	4						
Tunisia	12	6					
Union of South Africa	29	P		P			
ASIA							
Afghanistan	270						
Burma	[2]7	[2]1					
China	[2]4	3					
India	5						
India (Portuguese)		1					
Indochina	1	4			3		
Indonesia:							
Java	2						
Sumatra	1						
Iran	55	15	17	6			
Iraq	[2]14	18	6	4	9	6	10
Japan	495	175	[4]29	[4]15	[4]2	[4]5	
Korea (Southern)	[2]341	54					
Lebanon		1					
Pakistan	22	10	2	6	2		
Straits Settlements	[2]3						
Syria	1	[2]3	[2]8	[2]2	[2]13		
Transjordan	3	9					
Turkey (see Turkey in Europe).							
EUROPE							
France	1						
Germany (British Zone)	[2]2						
Germany (French Zone)	2						
Germany (United States Zone)	1						
Great Britain: Island of Malta	[2]2						
Greece	[2]17						
Hungary	1	1					
Italy	21						
Sicily	13						
Poland	37						
Spain	3	4					
Turkey	64	27	6	1	4	4	5
Yugoslavia	34	42		6	29		
NORTH AMERICA							
Costa Rica [3]	1	2					
Guatemala [3]	8						
Jamaica [3]	3		1		1		
Mexico [3]	23	8	2		2		
Puerto Rico [3]	2	2					
SOUTH AMERICA							
Argentina	[2]1						
Chile	[2]29	14	1	2	2	2	
Colombia	57	23	5				
Curaçao	1						
Ecuador	[2]38	2			2		
Venezuela	[2]1	[2]2					
OCEANIA							
Australia	[2]20	[2]13	[2]6	[2]1			
Hawaii Territory		1					

*Reports from some areas are probably murine type, while others include both murine and louse-borne types.

[1] Apr. 1–10, 1950. [2] Includes murine type. [3] Murine type. [4] In Tokyo and Yokohama only.

YELLOW FEVER

(C=cases; D=deaths)

Place		January–February 1950	March 1950	April 1950—week ended—				
				1	8	15	22	29
AFRICA								
French Equatorial Africa	C	1						
Port Gentil	C	[1] 1						
Gold Coast	C	5	2		1			
Ankobra Ferry	D	1						
Bisiasi	D		[1] 1					
Kade	C		1					
Oda Area:								
Akwatia	C	[1] 3			[1] 1			
Atiankama	C	1						
Sierra Leone	C	1						
Koinadugu District	C	1						
NORTH AMERICA								
Panama:								
Colon	D	1						
SOUTH AMERICA								
Bolivia:								
Chuquisaca Department	C	[2] 70	[3] 850					

[1] Suspected. [2] Azero Province, with 15 deaths. [3] Reported in Azero Province during the period Jan. 1–Mar. 14, 1950, with 230 deaths.

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